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MUSIC.

Music is a language that speaks by imitating, and as such it is understood by those who have successfully studied the art, and likewise by mere amateurs, who, with little if any knowledge of its principles, have learnt the meaning of its expressions by long practice, by frequently hearing and enjoying its performance. We have no knowledge of its origin, nor of the invention of the first instrument. So far as respects the known history of the art, we must consider the developement of vocal and instrumental music as coeval. The shepherds may have been the first performers, the leisure of their vocation affording them opportunity. In the Mosaic records we read of Jubal, the seventh in descent from Adam, playing upon musical instruments before the deluge, and in the Jewish history are enumerated a variety of instruments, capable of forming, with appropriate music, a very effective band. One of the oldest songs with instrumental accompaniments, is that of Miam, the sister of Moses, sung after the passage of the Red Sea. At the time of David and Solomon, music had reached its highest perfection among the Hebrews, and part of their religious services consisted in chanting solemn psalms accompanied by instruments. The sculptures of the harp and other instruments upon Egyptian works of very high antiquity are evidences of a knowledge of music among the Egyptians in the remotest times, and there is good reason to suppose that the most refined nations of antiquity were equally conversant with music. Indeed we find the most savage nations of the east possessing some instruments, though often rude, for producing music, accompanied by song and dance.

It is not intended here to trace the progress of the art down to its present state of perfection, although it is a most interesting subject. The limits of this paper would not suffice to do it justice. Germany has furnished us with the finest composers of music, and it is in that country that instrumental music has been carried to the highest perfection. To the authors of that country is generally conceded the ascendency in point of strength of style and originality of thought, over Italian writers. As a musical people they have no superiors on the globe. They have cultivated the language of music till they have brought it to a pitch of refinement far beyond the meagre state in which it still exists among the Asiatics. We cannot attribute this superiority to any thing else than to the cultivation of music among them as a people, and to the care with which their children are taught to play upon instruments. Accustomed as their ears are to the distinction of sounds, they experience a pleasure unfelt by the lover of melody, in the most complicated series of sounds, arranged so as to produce a harmonious impression. A Highlander, accustomed from his infancy to hear the wild melody of his national airs, either as sung alone or played upon a single instrument, cannot conceive how any pleasure could be derived from what, to his ear, seems nothing but an unmeaning medley of sounds. The German, used to hearing the richest harmony, produced by a multitude of instruments or voices, from his earliest years, entertains but a poor idea of the pleasure a man professes to receive from the sound of a single instrument. If we attend to this difference of tastes, it will furnish excellent data for explaining the tenacity which various nations manifest for their own music, be it ever so deficient. It is thus evident that music advances most where it is most cultivated; and that if we wish our children to love the concord of sweet sounds, we must early train them to music, and tune their voices to give forth the melody of their hearts. Music, it must be allowed, is not sufficiently cultivated in our own country. Our artificial wants engross our whole time in supplying them, and leave too little leisure to devote to so divine a science. Is there room to hope that it will ever be otherwise?

The above engraving is from the burin of Mr. N. Orr, a young artist of good promise, who has taken the Rooms in the Exchange recently occupied by Mr. Hall, whom he succeeds in this branch of his business, and whose pupil he has for some time been. We would recommend him to the patronage of all who may want any article in his line.

THE CARPENTER'S BOY.

"I wish to speak a word with Miss Lelia Vermont," said a carpenter's boy, as he entered a stately mansion in one of the most fashionable streets in the city of New York, in 1830.

"Help yourself to a seat in the entry, you will be attended to presently," was the haughty reply. Then turning to an individual with whom she had been conversing, said with a sneer, (having noticed that the lad desiring an interview had some carpenter's tools in his hand,) "I have such a dislike to speak to mechanics; I hate to encounter one."

"Possibly he is on business," said the individual.

"Oh, I never speak to one except on business," was the reply. "He has come, I presume to erect an arbor. We applied to Mr Thomas this morning, to have one built, and I take this to be his apprentice."

Mr. Vermont, the father of Lelia, (for this was the lady enquired for,) was a merchant of good standing, and a considerable property; hence Lelia's haughty, aristrocratic pretensions to *respectability*. She had at an early age, imbibed the too prevalent doctrine, that no individual who lived by the sweat of his brow, had the most remote claims to respectability. Had Mr. Orville been the father of the carpenter's boy, Albert had no doubt, occupied as lofty, and perhaps a much more prominent position in society, than did the infatuated Lelia. But alas! Albert was an orphan boy, a desolate stranger in a strange land. He had now seen but little more than nineteen years of actual life, but his heart in that time, had lived an age of misfortune, grief and endurance. He was alone in the wide world, entirely friendless; but he does not weep. No! he has no tears left for himself—he has shed them all on the far-off grave of his parents, and his keen expressive eyes are tearless. But under all this, his spirit quails not. No! there is a lofty pride and consciousness of power within, that will not let him yield to the pressure of outward fortune. He almost glories in his forlorn destiny, strange as it was for one so young.

"Pity he is *only a mechanic*," exclaimed Lelia, as she gazed with affected unconcernment, though with inward admiration, upon the raw mechanic (as she deemed him) while sitting in the entry. "Had he been a lawyer, doctor, or a professor of some sort, he might have—"

"A noble soul," interposed Mr. Shirvy, (the individual with whom she spoke,) who was a professor, though not an aristocrat.

"I was going to say from his appearance he might have merited—"

"Allow me to express my sentiments. He might have merited the hand of one in the higher walks of life. He is a noble looking lad."

"But were he a lawyer, doctor, or professor, indulging the views he doubtless now cherishes, my word for it, he would aspire to something noble."

"And where should we seek for noble spirits but among the *respectable class of society*? Ah, Lelia, many a noble heart has throbbed beneath the leathern apron of the mechanic, as ever swelled beneath the silken vestments of the lawyer, doctor or professor."

"But who ever heard of a mechanic becoming a great man?"

"I have. The *ablest* men were mechanics. Name but Awkwright, Fulton, Watt, Franklin, Whitney, and a whole host of others, I could mention, and where do you find their equals? The greatest men in the annals of the world—the men who have done most to enlighten and advance the

prosperity and the liberties of the human race, have been mechanics."

"It is a menial employment, and beneath the station of a gentleman."

"Not so, Lelia; there never was a doctrine more untrue. They are almost the only professions that have subsistance, reality and practical utility."

"I am sorry, Mr. Shirvy, to see you endeavor to elevate the mechanic to the level of respectable society."

"Why, Lelia, to the wise they are flood-gates of knowledge, and kings and queens are decorated with their handiwork."

Here the conversation was interrupted by a gentle rap at the door. The lad had become impatient, knowing that his master would require a certain amount of work to be done. With a becoming modesty, he requested Miss Lelia to give him the necessary directions relative to the location of the arbor. The professor left, and Lelia attended Albert to the garden. The arbor was soon finished, and the carpenter's boy was almost as soon forgotten.

About two years from the period of which we were speaking, Miss Lelia made a visit to Albany. The coach company and those constituting her travelling companions, she was informed by the proprietor, were to consist of Doctor W., Lawyer B., Professor M. B., and a young merchant, all of the city of New York. Lelia, in view of the select company began to anticipate a pleasant journey. Just then the whole company were thrown into consiernation by a wild shriek from the driver.

"Leap! leap, for your lives," resounded in the coach.

The horses had taken fright. They were descending a long hill. The driver having lost all control over the noble animals, saw that it would be death to remain where he was—it could be but death to leap for life; he leaped. The *gentlemen* burst open the door and threw themselves out in confusion, leaving Miss Lelia, the only female in the carriage, and the mechanic to shift for themselves. Seeing this, the young man, who previously attracted Lelia's attention, and the only male remaining in the coach, proffered her his assistance, which was most gladly accepted. Taking her in his arms and placing his foot firmly against the side of the carriage, he bounded so clearly upon the bank, as to be entirely out of the reach of danger. They escaped unhurt. The next moment the coach was dashed to atoms against a tree. The horses were caught soon after by some laborers on the road. Lelia was melted to tears by the unparalleled kindness of this unknown stranger, who had proved himself a genuine friend, in risking his own life to save hers. Such disinterested friendship was beyond her conception. She inquired his name.

"The carpenter's boy," said he, "who built your arbor."

"Take this, as the reward of your valor," said Lelia, tendering to him her own splendid gold watch.

"I have my reward," said he, respectfully declining the rich and valuable present.

"I pray you then, not to decline accepting my address," and she placed her card in his hand, "That should you ever need a friend, you may know where to find one."

They were now within a short distance of Albany, and concluded to walk the remainder of the road. Lelia and Albert were the only passengers able to walk.

In a few days after this event, Lelia returned to New York, and Albert, as soon as he could arrange matters, established himself in business in Albany. His efforts were attended with success far beyond his most sanguine expectations. In all his dealings and associations with men, he had a single eye to the promotion of the one grand object and principle, that "all men are created equal," and that inequality of respect should be awarded to men in proportion to their amount of virtue and intelligence.

Seven years had elapsed, when Mr. Vermont's name was found among the list of applicants for the benefit of the insolvent laws. This circumstance for a few days produced a slight change in the conduct of Lelia, but like the early dew it soon passed away. While she had fine apparel and plenty of money, (for I believe it is generally understood that men seldom petition now, until they have well lined pockets,) she was not to be circumscribed in her regular routine of pleasure. Retrenchment is perhaps the most difficult part with those who have been reduced in circumstances; at least, it appeared to be the most rugged part of the way to Mr. Vermont. How to descend from the lofty eminence of wealth and fashion, and to retire to seclusion he knew not. He had been too long the child of prosperity, to bear reverses with fortitude. He had no profession. Dig, he would not, and to beg he was ashamed.

"Would to Heaven," said he in perplexity of soul, "would to heaven, I had been a mechanic."

"La! pa," said Lelia, "what has come over you? I have frequently heard you say that you would as soon be a boot-black as a mechanic of any sort; that it was a menial employment."

"I grant it Lelia, but I was in an error—one of my fashionable errors. Were I a mechanic, now that my fortune is gone, that my riches have taken to themselves wings, my trade would be a resource."

"Have you forgotten having spoken of mechanics as a presuming set of blockheads, who you said, stalked the streets with their tools, with as much sang froid as a lawyer would, with his books or a doctor with his instruments."

"No, I have not forgotten, but I have forsaken, abandoned, totally abandoned my former erroneous sentiments. I have very recently discovered that there exists no difference between the books of a lawyer and the tools of a mechanic, save that the latter require the exercise of the hands, and the former that of the head; they equally promote the operator's designs, though I believe the mechanic contributes more to the public good or the public prosperity."

It was deemed expedient by Mr. Vermont to retire with his family from the fashionable street and mansion in which they then resided. Every vestige of former splendor was now gone, it was with a feeling of relief that the husband and wife sat down together, to lay schemes for the future. They determined to, and eventually did take lodgings in a respectable boarding house, where there was a single transient boarder besides themselves. This gentleman, they were informed was from Albany, and would remain but a week or ten days at most, having merely come to the city to purchase some articles of merchandise, which were not to be obtained in Albany.

The dinner bell rang, and the little group assembled in the diminutive dining room; the new comers were at once introduced collectively to Mr. Albert Orville, who at once recognized Lelia. Dinner passed in a very agreeable manner. Mr. Vermont having just retired from mercantile life, could speak of the turmoil attendant thereon, of the losses through failures and fluctuations of market, of the restless anxiety, of the perturbated state of mind incident to such a life, to all of which Mr. Orville was a total stranger, consequently it was an interesting subject, inasmuch as he was preparing to embark in a mercantile career.

The limits we have allotted to this narative will not admit of a minute detail of circumstances; let it suffice to know that Mr. Orville's stay was protracted some four or five weeks beyond the time appointed for his departure, in consequence of growing attachment between himself and Lelia. Duty however, called him to dash away for a time the cup of happiness he longed to drain to the bottom.

Six months after this period Mr. Orville returned to replenish his store; but more especially to suggest the following propositions to Mr. Vermont.

First, the union of himself with Lelia, having obtained her consent by letter.

Second, to offer Mr. Vermont the management of his store, having learned his difficulties.

The first of these the old man acceded to with evident pleasure, but when Orville commenced, "And now my purpose is, if you will accept of it without attributing to me a selfish motive, to remove your entire family to Albany, where I have a comfortable dwelling prepared for you, where you shall, during life lack none of its comforts, if they can be obtained by honest industry." This astonishing intelligence was more than the good old man was prepared to receive, he was completely overwhelmed in a flood of tears—tears of unspeakable gratitude. The old lady rubbing her hands with an occasional ejaculation of "Heaven be praised!" while Lelia sat motionless, too full to articulate a word.

"Who," ejaculated the old man "can this benefactor be?" as if invoking the aspirations of Heaven.

"Possibly Lelia can tell," said Mr. Orville as he handed Lelia her own card. A glance was sufficient.

"Is it possible," exclaimed Lelia, "is it the Carpenter's boy."

"Yes," he rejoined, in accents of love, as he pressed her to his bosom, "it is the Carpenter's boy."

"And the preserver of my life," she added with emotion.

"May he be the sweetner of it, too, "continued the old man.

The scene which followed the above may possibly be imagined by the reader, for I shall not attempt to describe it, lest I should do it injustice.

An explanation was immediately granted to the mystified parents, who were still in wonder. This being anticipated by the explanation, the happy family proceeded to prepare for the nuptials, immediately after which they embarked together for their new homes, having learned from the foregoing circumstances that it was less difficult for a mechanic to become a merchant, than for a merchant to become a mechanic.

"Now Lelia," said her father, "you have learned an instructive lesson. Your judgment has hitherto been of that superficial kind which attaches merit to the flimsy drapery that constitutes a covering to the body. You have formed your estimate of man from his birth, occupation or appearance."

"This," continued Mr. Orville, "is the great evil we should combat. I most ardently believe that no such thing as respectibility can exist aside from an honest and useful life. I contend that no branch of industry is degrading—that no employment that contributes to the general good and comfort of society is disreputable. I would tolerate no other aristocracy than that of merit. I fearlessly declare it a false system that would exclude the honest, upright mechanic from the pale of *genteel society*."

And in time we may predict, without pretensions to prophecy, these will be the sentiments of the great mass, and men will be judged like deeds, by their effect—and those alone will be considered good and great, which have a tendency to improve mankind. He alone is great who rises by his moral force above the chance of fate—who builds *himself* a pedestal, against whose base the surges of misfortune lose their strength in vain, and on whose surface sleep the rays of melting temptation without effect.

THE POLISH MUSICIAN.

Guzikow, or Guzikoff, (one never knows how to spell these outlandish names,) was a Popish Jew—a shepherd in the service of a nobleman. From earliest childhood, music seemed to pervade his whole being. As he tended his flocks in the loneliness of the fields, he was forever fashioning flutes and reeds from the trees that grew around him. He soon observed that the tone of the flute varied according to the wood he used; by degrees he came to know every tree by its sound; and the forests stood around him an oratorio. The skill with which he played on his rustic flutes attracted attention. The nobility invited him to their houses and he became a favorite of fortune. Men never

grew weary of hearing him. But soon it was perceived that he was pouring forth the fountains of his life in song. Physicians said he must abjure the flute or die. It was a dreadful sacrifice, for music to him was life. His old familiarity with the forest came to his aid. He took four round sticks of wood and bound them closely together with bands of straw; across these he arranged numerous pieces of round, smooth wood of different kinds. They were arranged irregularly to the eye, though harmoniously to the ear, for some jutted beyond the straw-bound foundation at one end, in and out, in apparent confusion. The whole was lashed together with twine, as men would fasten a raft. This was laid on a common table, and struck with two ebony sticks. Rude as the instrument appeared, Guzikow brought from it such rich and liquid melody, that it seemed to take the heart of man on its wings, and bear it aloft to the throne of God. Those who have heard it, describe it as far exceeding the miraculous warblings of Paganini's violin. The Emperor of Austria heard it, and forthwith took the Polish peasant into his own especial service. In some of the large cities, he now and then gives concerts, by royal permission; and on such an occasion, he was heard by a friend of mine at Hamburg.

The countenance of the musician was pale and haggard, and his large dark eyes wildly expressive. He covered his head according to the custom of the Jews; but the small cap of velvet was not to be distinguished in color from the jet black hair that fell from under it, and flowed over his shoulders in glossy, natural ringlets. He wore the costume of his people, an ample robe, that fell about him in graceful folds. From head to foot all was black, as his own hair and eyes: relieved only by the burning brilliancy of a diamond on his breast. The butterflies of fashion were of course attracted by the unusual and poetic beauty of his appearance and ringlets *a la Guzikoff* were the order of the day.

Before this singularly gifted being stood a common wooden table, on which reposed his rude looking invention. He touched it with the ebony sticks. At first, you heard a sound as of wood; the orchestra rose higher and higher, till it drowned its voice; then gradually subsiding, the wonderful instrument rose above other sounds, clear warbling, like a nightingale; the orchestra rose higher, like the coming of the breeze—but above them all swelled the sweet tones of the magic instrument, rich, liquid, and strong, like a sky-lark piercing the heavens! Those who heard it listened in delighted wonder, that the trees could be made to speak thus under the touch of genius.

There is something pleasant to my imagination in the fact, that every tree has its own peculiar note, and is a performer in the great concert of the universe, which forever rises before the throne of Jehovah.

HABITUDES OF IRON.—Mr Wilkinson, of London, lately presented to the Asiatic Society a paper upon the spontaneous heating of cast iron when brought into the air after it had been for many years under salt water. Several instances of this action were stated; the most curious of which was that of some cannon balls, raised in June, 1836, by means of the diving apparatus, from the ship Mary Rose, which sunk in a naval engagement near the Isle of Wight in July, 1545, near 300 years before. These balls all became hot on exposure to the air, and fell to pieces. It was observed, also, that all lost about 36 per cent of their weight. An iron ring, from one of the guns, was placed upon the table: being of wrought iron, it had not exhibited the phenomena shown by the cast iron, and was merely oxidized. Mr. Wilkinson stated that the cast iron grating which had been long immersed in the porter-vats in the large breweries of London, grew hot when the porter was drawn off, and from a similar cause. He then alluded to the cast iron protector which had been fixed to the copper bottoms of a ship so as to prevent their corrosion by salt water, in pursuance of a suggestion by Sir Humphrey Davy, and observed that in this case the action of the salt water on the iron was greatly aided by the galvanic action caused by the two metals. The iron lost half its weight in two or three years, although retaining its original form; and in one large piece, which he produced, the weight was reduced almost to the levity of a piece of cork and this piece would make a mark on paper like a lump of black lead. The cause of the action in all these cases was the minute quantity of carbonic acid gas held in solution by the water, it being taken up with the atmospheric air, which was always found to contain about one per cent of this gas. This acid was the cause of rust, which he proved by exhibiting two bottles, one containing iron in ordinary water, the other, iron in water deprived of its carbonic acid gas. In this bottle the iron was perfectly bright, notwithstanding it had been two years immersed; while in the other bottle the metal was covered with rust. These facts gave a clue to the cause of the curious phenomenon first mentioned. It was well known to chemists that several metals, when reduced to a minute state of division, caught fire spontaneously by the adsorption of oxyen. Cast iron, which had been long exposed to the action of salt water, was in this state. It was, in fact, almost all carbon; and the little metal that remained, being diffused throughout the mass, was necessarily very minutely divided. On exposure to the air, an absorption of oxygen took place, and great heat was evolved.

CAST IRON RAIL.—The Harrisburgh Reporter speaks of a new cast iron rail lately laid on the Lancaster and Harrisburg rail road. The rail is described as a succession of cast iron arches, founded upon piles and held in their places by wrought iron transverse and diagonal ties. The rail weighs eighty-five pounds per yard, or, including chairs, one hundred and thirty-seven tons of cast iron to the mile. The top of the rail is about two feet above the surface of the ground. A serviceable cast iron rail is a great desideratum. It would decrease the cost of railroads, and promote the prosperity of the iron trade. The Reporter justly remarks—"It is estimated that there are in Pennsylvania, and six adjoining States, over two thousand miles of rail roads commenced and projected, that will probably be completed within the next ten years. If the plan of iron road should be generally used, at least four-fifths of the whole amount required would be obtained from Pennsylvania, and the iron masters of that State would receive for the manufature of rail road iron within the next ten years more than $11,000,000."

NEW POWER LOOM.—The *New York Tribune* contains an account of a power loom recently invented by Mr. Clinton G. Gibbins. Among the peculiarities of this new loom, is its dispensing entirely with cams, headdles and treaddles, in weaving every description of cloth. The new feature, which the inventor calls a *"weft puller,"* seems almost instinct with intelligence and life, drawing every thread of the weft tight, after the shuttle has been thrown, drawing it forward and drawing it up to the face of the cloth, thereby preventing the looping of the weft thread occasioned by the diagonal. The machine stops the instant a shuttle is exhausted or a thread broken, thus securing that perfect appearance indispensible to figured cloths. And although working at a speed of 1000 *picks* or threads of weft per minute, the fabric produced was absolutely faultless.

PIN MAKING.—The pin factory at Stafford, Conn., is said to be the only one of the kind in the world. The machine takes the wire, cuts it off the right length, puts on the head, point, &c., completely finished before it leaves the machine; one machine makes about 36,000 a day; there is also a machine connected with it for sticking them into the papers—the pins are put into a hopper that drops them down to a paper, which is carried around a cylinder; it sticks on four dozen at a hitch, and makes about fifty hitches a minute. It was invented by Mr. H. Waters, of Stafford.

MARINE GLUE.—Experiments have been made in England with a view to test the adhesive qualities of a composition invented by Mr. Jeffery, bearing the above name, which have resulted in showing it to be not only insoluble in water, but of so binding a nature that when a ball formed of two solid pieces of hard wood joined together by means of the glue, and weighing eight pounds and a quarter, was fired with a charge of 15 ounces of powder from an eight inch mortar to the distance of 750 yards, it struck the ground, from which it several times rebounded, without the slightest appearance of the joining having given way, although the wood in one or two places appeared shaken.

A ball thus formed was subsequently subjected to the action of a powerful sledge hammer, which shattered the wood, but did not separate the parts.

GOVERNMENT OF THE UNITED STATES.

John Tyler, *President;* Daniel Webster, *Secretary of State;* Walter Forward, *Secretary of the Treasury;* John C. Spencer, *Secretary of War;* A. P. Upshur, *Secretary of the Navy;* C. A. Wickliffe, *Postmaster General;* Hugh S. Legare, *Attorney General.*

UNITED STATES SUPREME COURT.—Roger B. Taney, *Chief Justice;* Joseph Story, Smith Thompson, John M'Lean, Henry Baldwin, James M. Wayne, Peter V. Daniel, John M'Kinley, John Catron, *Associate Justices;* Richard Peters, Junior, *Reporter;* William T. Carroll, *Clerk.*

GOVERNMENT OF THE STATE OF NEW YORK.

William C. Bouck, *Governor;* Daniel S. Dickinson, *Lieutenant Governor and President of the Senate;* Henry Underwood, *Private Secretary to the Governor;* Azariah C. Flagg, *Comptroller;* Philip Phelps, *Deputy Comptroller;* Thomas Farrington, *Treasurer;* John William, *Deputy Treasurer;* Samuel Young, *Secretary of State and Superintendent of Common Schools;* Archibald Campbell, *Deputy Secretary and Clerk of the Commissioners of the Land Office;* Samuel S. Randall, *Deputy Superintendent of Common Schools;* George P. Barker, *Attorney General;* Nathaniel Jones, *Surveyor General;* Henry Storms, *Commissary General;* Rufus King, *Adjutant General;* Robert H. Pruyn, *Judge Advocate General;* Nicholas Hill, Jr., *State Reporter;* William Cassidy, *State Librarian;* Isaac L. Ellwood, *Clerk of the Senate;* H. N. Wales, *Clerk of the Assembly;* James Kent, Jr., George W. Little, Daniel P. Bissell, Benjamin Enos, James Hooker, Stephen Clark, *Canal Commissioners;* George W. Newell, *Chief Clerk of the Canal Department;* Chandler Starr, Trumbull Cary, John G. Forbes, and William H. Averill, *Bank Commissioners.*

REGENTS OF THE UNIVERSITY.—Governor and Lieutenant Governor, *(ex officiis,)* Peter Wendell, *Chancellor;* Elisha Jenkins, James Thompson, Peter Wendell, John Greig, Gulian C. Verplanck, Gerrit Y. Lansing, John Keyes Paige, John A. Dix, William Campbell, Erastus Corning, Prosper M. Wetmore, James M'Kown, John L. Graham, Amasa J. Parker, John M'Lean, Joseph Russell, John C. Spencer, Gideon Hawley, David Buell, Jr., T. Romeyn Beck, *Secretary.*

COURTS IN THE STATE OF NEW YORK.

UNITED STATES CIRCUIT COURT, *at New York*—Equity and criminal terms, last Monday of February and July. General terms, first Monday in April and last in October. *At Albany,* third Tuesday in October. *At Canandaigua,* third Tuesday in June.

UNITED STATES DISTRICT COURT, *for the Southern District of New York*—Samuel R. Betts, Judge; Frederick J. Betts, Clerk; Silas M. Stilwell, Marshal; Ogden Hoffman, District Attorney. *For the Northern District*—Alfred Conkling, Judge; Amos Little, Clerk; Clark Robinson, Marshal; Joshua A. Spencer, District Attorney.

Terms—Southern district, at New York, first Tuesday in every month; Northern district, at Albany 3d Tuesday in January, Utica 3d Tuesday in July, Rochester 3d Tuesday in May, Buffalo 2d Tuesday in October; one term in St. Lawrence, Clinton or Franklin, at such time as the Judge may appoint.

SUPREME COURT OF THE STATE OF NEW YORK—Samuel Nelson, *Chief Justice;* Greene C. Bronson, Esek Cowen, *Justices;* Nicholas Hill, Jr., *Reporter;* John K. Paige, William P. Hallett, Hiram Denio, Jacob Sutherland, *Clerks;* Philip Wendell, John Fairlie, J. Gregory Curtis, A. G. Montgomery, *Deputy Clerks.*

Terms—At Albany, 1st Monday in January; at Rochester, 3d in October; at New York, 1st Monday in May; and at Utica, first Monday in July. Also, at Albany, for hearing nonenumerated motions, first Tuesday in each month, except January, May, July and November.

COURT OF CHANCERY—R. Hyde Walworth, *Chancellor;* John M. Davison, *Register;* John Walworth, *Assistant Register;* Alonzo C. Paige, *Reporter;* Hiram Walworth, Alexander Forbes, John M. Davison, Gideon M. Davison, J. Watson Williams, Robert B. Monell, Stephen A. Goodwin, Samuel L. Selden, *Clerks.*

Terms—At Albany, fourth Monday in January and August; at New York, fourth Monday in May and October. The first and third Tuesdays of every month, during vacation, are assigned for hearing motions, petitions, and appeals from interlocutory decrees of equity courts.

SUPERIOR COURT OF THE CITY OF NEW YORK—Samuel Jones, *Chief Justice;* Thomas J. Oakley, B. B. Tuthmadge, *Justices.*

Regular Terms—The first Monday of each month

THE PICTURE.

Willis, speaking of a lady who married for money alone, says, "she married him for an establishment," but forgot he was part of it—dazzled with the frame, she overlooked the hideousness of the picture. A predecessor of Willis has illustrated this subject at length. We take the following from Coleman's *Broad Grins.*—*Ed. Mechanic*

Old men young women wed, by way of nurses;
Young men old women, just to fill their purses;
Nor young men only—for 'tis my belief,
Nor do I think the metaphor a bold one,
When folks in life turn over a new LEAF,
Why very few would grumble at a gold one.

A wort'y knight 'yclept Sir Peter Pickle,
By love was made to look exceeding glumpy;
The maid whose charms had power his heart to tickle,
Was Miss Cordelia Carolina Crumpy!

This said Sir Peter, was, as you shall hear,
Although a knight, as poor as any poet;
But handsome as Apollo Belvidere
And vain Sir Peter seem'd full well to know it.

No wonder, then, that Miss Cordelia Crumpy
Could not unmov'd hear such a lover sue:
Sweet, sympathetic maiden, fat and stumpy,
Green ey'd, red hair'd, and turn'd of sixty-two.

But tell me, Muse, what charm it was could tickle
The once invincible Sir Peter Pickle?
Was it her eyes that, so attached to one day,
Look'd piously seven different ways for Sunday?
Was it the hump, that had a camel suited?
Her left leg bandy?—or her right club footed?
No, gentle friends: altho' such beauties might
Have warm'd the bosom of an anchorite,
The charm that made our knight all milk and honey,
Was that infallible specific, money!

Peter, whom want of brass had made more brazen,
In moving terms began his love to blazon;
Sigh after sigh in quick sucession rushes,
Nor are the labor of his lungs in vain;
Her cheek soon crimsons with consenting blushes,
Red as a chimney top just after rain!

The license bought, he marries her in haste,
Brings home his bride, and gives his friends a gay day;
All his relations, wond'ring at his taste,
Vow'd he had better had the pig fac'd lady!
Struck with this monstrous lump of woman kind,
The thought of money never cross'd their mind.

The dinner o'er, the ladies and bride
Retir'd and wine and chat went round jocosely;
Sir Peter's brother took the knight aside,
And question'd him about the matter closely.

"What spell could into such a hobble throw you?"
"Just step up stairs," says Peter, "and I will show you."
Up stairs they went—"There, there's her picture! say,
Is it not like her, Sir? your judgment, pray"—
"Like her, Sir Peter?—take it not uncivil,
'T is like her, and as ugly as the devil;
With just her squinting leer—but hang it,
What a very handsome FRAME it 's got!
So richly gilt and so superbly wrought!"
"You 're right, says Peter, 't was the frame that caught!
I grant my wife is ugly, squabby, old,
But still she pleases, being SET IN GOLD!
Let others for the PICTURE feel a flame,
I, my good brother, married for the FRAME!

KNOWLEDGE FOR THE PEOPLE.

BY JOHN TIMBS.

MECHANICS.

Why have pincers or forceps such extraordinary power?

Because they are double levers, of which the hinge is the common prop or fulcrum. Dr. Arnott thus illustrates the advantages of this machine:—in drawing a nail with steel nippers, we have a good example of the advantages of using tools; 1. The nail is seized by teeth of steel, instead of by the soft fingers; 2. Instead of the griping force of the extreme fingers only, there is the force of the whole hand conveyed through the handles of the nippers; 3. The force is rendered, perhaps six times more effective by the lever length of the handles; and 4. By making the nippers, in drawing the nail, rest on one shoulder as a fulcrum, it acquires all the advantages of the lever or claw-hammer for the same purpose.

Why does a combination of levers produce such extraordinary power?

Because if a lever, which makes *one* balance *four*, be applied to work a second lever which does the same, one pound at the long arm of the first, will balance sixteen pounds at the short arm of the second lever, and would balance sixty-four at the short arm of the third such, &c.—*Arnott.*

Why is motion transmitted through a train of wheel-work by the formation of teeth upon the circumference of the wheels?

Because the indentures of each wheel fall between the corresponding ones of that in which it works, and ensure the action so long as the strain is not so great as to fracture the tooth.

Why is a heavy wheel sometimes used as a concentrator of force, or a mechanic power?

Because, by means of a winch, or weight, or otherwise, motion or momentum is gradually accumulated in the wheel, and is then made to expend itself in procuring some sudden and proportionally great effect.

The coining presses of the Royal Mint are thus impelled by a fly wheel, and generally complete a coin by one blow; and they strike, upon an average, 60 blows in one minute; the blank piece, previously prepared and annealed, being placed between the dies by part of the same mechanism. The number of pieces which may be struck by a single die of good steel, properly hardened and tempered, not unfrequently amounts, at the Mint to between 3 and 400,000. There are eight presses frequently at work for ten hours each day, and each press produces 3,600 pieces per hour; but making allowances for occasional stoppages, we may reckon the daily produce of each press at 30,000 pieces; the eight presses, therefore, will furnish a diurnal average of 240,000 pieces.

Why is it an error to account the fly-wheel a positive power?

Because, in common cases, it merely equalizes the effect of an irregular force. Thus, in using a winch to turn a mill, a man does not act with equal force all round the circle; but a heavy wheel, fixed on the axis, resists acceleration, and receives momentum, while his action is above par, and returns it again while his action is below par, thus equalizing the movement. Again in circular motion produced by a crank, when by pressure of the foot on a treadle, we turn a lathe, or grindstone, or spinning-wheel, the force is only applied during a small part of the revolution, or in form of interrupted pushes, yet the motion goes on steadily, because the turning grindstone, or wheel, or lathe, merely becomes a fly and reservoir, equalizing the effect of the force.

Why is the common winch in principle a wheel?

Because the hand of the worker describes a circle, and there is no difference in the result, whether an entire wheel be turning with the hand or only a single spoke of the wheel.

Why is a man on a treadmill compelled to keep perpetually moving?

Because, being placed at the circumference of the wheel, his weight turns it, and he must move forward as fast as the wheel descends, so as to maintain his position continually at the extremity of the horizontal diameter of the wheel.

The invention of the treadmill is, by some persons, said to have been derived from a squirrel in a cylindrical wire cage.

Why have wheel carriages been advantageously substituted for sledges?

Because the rubbing or friction, instead of being between an iron shoe and the stones and irregularities of the road, is between the axle and its bush, which have surfaces smoothed and fitted to each other, and well lubricated.

Why does the wheel aid the progress of a carriage?

Because, while the carriage moves forwards, perhaps 15 feet, by one revolution of its wheel, the rubbing part, viz. the axle, only passes over a few inches of the internal surface of its smooth greased bush. Again, the wheel surmounts any abrupt obstacle on the road, by the axle describing a gently rising slope or curve; and by rising as on an inclined plane, and giving to the drawing animal the relief which such a plane would bring.—*Arnott.*

FAMILIES OF LITERARY MEN.

The Quarterly Review, in discussing an objection to the Copyright Bill of Mr. Sargeant Talford which was taken by Sir Edward Sugden, gives some particulars about the progeny of literary men. "We are not," says the writer, "going to speculate about the causes of the fact—but a fact it is—that men distinguished of any sort, very rarely leave more than a brief line of progeny behind them. Men of genius have scarcely ever done so. Men of imaginative genius, we might say, almost never. With the exception of the noble Surrey, we cannot, at this moment, point out a representative in a male line, even so far down as the third generation of an English poet, and we believe the case is the same in France. The blood of beings of that order can seldom be traced far down even in the female line. With the exception of Surrey and Spencer, we are not aware of any great English author of at all remote date, from whose body any living person claims to be descended. There is no other English poet prior to the middle of the eighteenth century, and we believe no great author of any sort—except Clarendon and Shaftsbury of whose blood we have an inheritance among us. Chaucer's only son died childless. Shakespeare's line expired in his daughter's only daughter. None of the dramatists of that age left any progeny—nor Raleigh, nor Bacon, nor Cowley, nor Butler. The grand daughter of Milton was the last of his blood. Newton, Locke, Pope, Swift, Arbuthnot, Hume, Gibbon, Cowper, Gray, Walpole, Cavendish,—and we might greatly extend the list, never married. Neither Bolingbroke, nor Addison, nor Warburton, nor Johnson, nor Burke transmitted their blood. Mr. Renouard's last argument against a perpetuity in literary property is, that it would be funding another noblesse. Neither jealous aristocracy, nor envious Jacobism need be under any alarm. When a human race has produced its "bright consummate flower" in this kind, it seems commonly to be near the end.

Poor Goldsmith might have been mentioned in the above list. The theory is illustrated in our own day. The two greatest names in science and literature, of our own time, were Davy and Sir Walter Scott. The first died childless. Sir Walter left four children, of whom three are dead, only one of them (Mrs. Lockhart) leaving issue, and the fourth, his eldest son, though living and long married, has no issue. These are curious facts.

THE CALAMITIES OF THE YEAR.—The past year has been distinguished by providential calamities. In some instances the elements seem to have been commissioned to perform the work of destruction to a fearful extent, and with unprecedented rapidity. Three of the greatest calamities that have occured within a century happened within a short period of 100 hours. The terrible fire at Hamburg, which destroyed 2,000 houses, and nearly $30,000,000 of property, in the fairest portion of the city, was followed in less than two days by the earthquake at St. Domingo. In this earthquake the towns of Cape Haytien and Santiago, 60 miles apart, were entirely destroyed, and not less than 7,500 of the inhabitants perished. On the very next day, while St Domingo was yet rocking with shocks of the earthquake, and the ruins of Hamburg were not yet three days old, a train of cars filled with passengers, on the railroad from Paris to Versailles, were thrown from the track, and set on fire by the engine. Before the passengers, who were locked in, could be removed, 70 of them perished in the flames! More recently the city of Liverpool has suffered extensively by fire. In this country the cities of Portland, New York, Charleston and Columbia have suffered severely from the same cause. At one period of several weeks during the year, it was estimated that the loss of steamboats on the western rivers averaged one a day. In connection with six of these boats 200 lives were lost. If to all this we add the loss of life at sea, which has been unusually great the past, we must regard it as a year of calamities. In all these things God shows himself to the nations as the inflexible supporter of law, and teaches men the great lesson, that when any of the laws of the material world or of life and prudence are violated they must meet the penalty. He chooses not to avert the consequences, however ruinous they may be.—*Dayspring.*

ALBANY, SATURDAY, FEB. 11, 1843.

THE VEGETABLE EMPIRE.

All the substances which the chemist procures from vegetables, by pursuing their analysis as far as his means have hitherto allowed are chiefly carbon, hydrogen, and oxygen. Nitrogen is a constituent principle of several, but it is only present in small quantity; the alkali which is extracted from several vegetables, probably owes its origin to this, and tannin, the principle of astringency, which is found in the bark, the roots, and the leaves of some trees, seems to be carbon in a particular state. From these simple substances, then, arise the varied phenomena which compose the empire of vegetation, embracing the globe from pole to pole, and from the summit of the Andes, where the lichen creeps over the hardest rocks, to the bosom of the ocean, from which rise floating fields of algæ and fuci. Cold and heat, light and shade, fertile lands and pathless deserts, every place and every temperament, in the language of Linnæus, has its own kind of vegetation, which thrives and prospers there. Plants of the cryptogamic class even ramify upon the dark vaults of mines, and upon the walls of the deepest caverns. The course which vegetation pursues in its conquests over inorganic matter, presents remarkable gradations. Let a volcano, says Humboldt, raise up from the bottom of the sea, all at once above the boiling waters, a rock covered with scoriæ; or, to refer to a less dreadful phenomenon, suppose the *nereides*, with united industry, continue to elevate their cellular abodes for thousands of years, till, finding themselves above the level of the sea, they die, after having in this way formed a flattened isle of coral; organic force is instantly ready to produce vegetation upon this rock: yet who can have brought there so suddenly the seeds of plants? Is it the birds, or the winds, or the waves of the sea? It is the great distance from the coasts which renders it difficult to decide this question. But scarcely has the air come in contract with the naked rock, when in the northern climates there is formed upon its surface a net work of tufted threads, which appear to the unassisted eye like colored spots, some of them are bordered by salient lines, sometimes single, sometimes double; others are traversed by furrows which cross each other. As they grow older their bright color darkens; the yellow, which shone to a great distance, changes into brown, and the bluish gray of the lepraria insensibly acquires a tint of dusty black. The extremities of the older coverings approach and mingle together, and upon this dark ground are formed new lichens, of a circular form, and of a dazzling whiteness. It is thus that an organic net work is worought in successive layers. Where the majestic oak now raises its ærial head, slender lichens once covered the bare rock. Moss, grasses, herbaceous and shrubby plants, fill up this long interval, the duration of which cannot be calculated: in the torrid zone, the prolutaca, the gomphrena, and other low plants inhabiting the shores, supply the place, and produce the effects of the lichens and mosses in the northern climates. By such imperceptible gradations is the earth finally clothed.

THE QUESTION, ONCE MORE.

Now that the state prison labor question has assumed a tangible form, it becomes us to look about us with an eye of circumspection, and, in case any thing is wrong, or appears to be so, to give the alarm. The most the mechanics have to fear is from the distracting efforts of those who, with a head full of wild and extravagant schemes, and careless of every thing save their own personal interests, are endeavoring to use the "excitement"—we detest the word, in its usual application—which prison competition and prison rascality have occasioned, to promote some selfish end—to speculate out of the state, by saddling the state with some useless and unprofitable purchase. Some of these selfish schemes are already developing themselves. Thus we have one man prowling about our legislative halls with a "pocket full of rocks," endeavoring to "suck in" the state by palming off upon it some granite quarry or other, lying the Lord knows where, just as if the experiment of quarrying stone had not before been attempted and—*had failed!* He can be disposed of in short order. The dressing of stone gives employment for a large number of workmen, and the demand is so limited that these men must ultimately be thrown out of employ, if the state attempts any such thing. Further than this, it cannot be made profitable to the state, for the demand is fluctuating—never great, for any length of time.

Next we have some one with a lead mine. But this mine cannot employ over fifty men at the utmost, which number, compared with the whole number of convicts, is but a drop in the bucket. But this plan has weighty objections. It is very unhealthy. In the smelting department, few men can work more than tow months at a time, and though it is undoubtedly desirable to put criminals beyond the bounds of society, it is not deemed expedient to *poison* them. That we are not yet prepared for. Further than this, it cannot be profitable to the state, for it is the *labor* of the convicts that the state wants to dispose of, if possible, with profit to herself, and without injury to the mechanics. Therefore the *labor* of the convicts must be rendered available, and if any plan proposed does not make it thus, it is *objectionable*. This project then, to say the least, is futile.

Again, we have others, who with a mock patriotic air and a *deeper* design, endeavor to break down the opposition to the present prison system, by diverting the public mind and distracting attention, by such indefeasible projects as building roads, digging canals, &c., &c., and all with the hope of amusing the mechanics, and strengthening the present system. Some papers we find advocating projects like these, whether honestly or not we cannot say, but it appears to us with the same worthy design. And some there are, high in authority, who talk of humbugging the people, by bringing them to believe that if the state can't give them a rail road, they at least can build them a turnpike, with convict labor!

Still besides these we have others, and we give them credit for their frankness, while we lament their want of perception, who maintain that the prison as it is, although it does injure the mechanics, is the best thing that can be had, and are therefore opposed to any change. It is with this class that we have been arguing for ten years, and those whose interests, *pecuniary interests* we mean, were not concerned, have very generally come over to our faith in this matter.

But besides these, there are others, all entertaining different views, animated by different motives, and who, while they are opposed to each other in nearly every point, still agree in opposing the mechanics and *the* plan which has received their support as a body. Yet despite this coalition, despite all opposition, and sustained by the right, we feel confident that the Legislature will this winter render to the mechanics that justice which has been so long delayed. The report of Mr. Cook is favorably received in every quarter, and the proposition contained, coinciding as it does with their preconceived views, is satisfactory to the mechanics throughout the state.

Many a philosopher labors through life under a short jacket, or in his shirt sleeves, and his merits are unknown, or unappreciated; while the assumed philosopher bears away the laurel undeservedly, and lives in splendor and renown upon the shadow of merit. We do not know what was the design of the writer of the following sketches of character, but they present a true though homely picture of what we every day see. The humble artizan supplies the necessaries of life to those who make a figure in the world, and contributes largely of his earnings to keep up the establishments of church and state, but is himself unknown—in fact nobody; while we may every day notice the splendid establishments of those who, unfit for the liberal professions by want of talent, and for mechanical trades by want of genius, owe their elevation solely to the gullibility of the public. They seem "born to eat up the corn." Others choose the liberal professions for the same purpose, only to disgrace them. Our correspondant, however, draws no invidious comparisons, it will be seen; we hope he will favor us with an other group.

MY NEIGHBORS.

It is so seldom that one can meddle with his neighbors or his neighbors' affairs, without "raising the neighborhood," and getting himself in a *muss*, I attempt a sketch of some of them with much diffidence and misgiving as to the propriety or even safety of so doing. But as I am known to them all as a "clever fellow," and never suspected of writing for the papers, perhaps they will not guess it to be me, and as I intend to flatter them a little, and in all cases to speak as well of them as a neighbor can, and an intimate neighbor too, I shall risk for once to "write a piece." Should I succeed in this but indifferently well, I'll try my hand at another new trick and either advertise for a wife or go a courting for one in less than a week.

As I would be respectful and give precedence to those who lead in society, fashions and morals, piety and scandal—barring the last, as it may be libelous—I shall show my "distinguished considerations" by calling upon my gospel minister.

The Rev. is an "excellent man" a "rare ripe

scholar," a "devout christian," and an "elegant preacher," consequently he commands a first rate salary, and of course lives in first style in a fine large house. His rooms are finished, large and airy, the furniture rich and elegant, his library large, gilt edged and plates. His society of the most select and polished kind, distinguished for their talents, wealth, place and influence. His cabinets are large and curious, his gardens filled with rarest flowers and exotics, his vines and fruits select and delicious. His children are educated and richly clad, and he devotes much leisure time to calls and the interchanges of civilities with the most respectable citizens and distinguished visitors. He is of a delicate constitution, nervous and dispeptic, and has travelled much for his health, which it always improves; his figure is large, portly and commanding, and his manners bland and graceful, engaging and communicative.

Next I will call on my shoemaker, also the shoemaker of the minister. He lives in the street back of the minister, in a small house in the rear. He has nine children which have all been sent to the common school. The oldest have learned trades, and two have gone whaling. A daughter sews at the ministers, and by hard industry the father is enabled to pay his way, and has a good seat in the church. He has long been a member, and was one to vote the minister a call when he came to preside over the church.

Neighbor Crispin has made shoes for a great many years, has been an honest man and devout christian, yet he has never been able to live in a better house, or clothe his children in any thing but home-spun,—satinett and calicoes being their Sunday wear.

He has no cabinets or library beyond a few church books, which were given to the mother and daughter by the distributing members of the church societies; of course they were cheap but good ones. The honest father takes one political paper which he uses to wrap about his work as he sends it home daily. His goodness of heart makes all appeals to his kindness and charity successful, hence he gives something to all the benevolent collections of the church, and has frequently helped to raise the sums necessary to assist the pastor in his travels after health. His society is of course limited, and confined to such as are in about his "circumstances in life." I have often heard Mrs. Crispin extolling her minister as a pattern of humility, and that he was not so "stuck up," but that he regularly called at "their house" every year.

Now for a visit to a different style of workman; that is our dentist. This neighbor studied the science, art and mystery of book-keeping and salesman in a retail grocery in his early life, but after took to physic with a village doctor, attended the usual courses of lectures &c., but failed upon his examination and did not get the degree. He then took up dentistry in company with an "ingenious" locksmith, one furnishing the science and the other the mechanical skill; but as the locksmith was willing to furnish the work for a share of the money, and cared nothing for the honor of the profession, the doctor alone hung out the sign with the very proper appendage of M. D. The Dr. doing the surgery, appears in a professional gown with elegant instruments, fine large operating rooms richly furnished. The new annuals and gems of art of the latest importations strews the centre table, and his cabinet is nearly as large as the ministers. He is a connoisseur of the arts, criticises the old masters, shows the "soul breathing out" in this gem, and the "mellow warmth" of that sky, purely Italian," the "delicate richness" of such a tint, and all with the most graceful elegance. His *practice* is with the best circles, and supposed to be very lucrative. He has the honor to refer to a large number of our first citizens as to his respectability in the profession.

My next neighbor the blacksmith is a very hard working, ingenious mechanic, and to him the neighborhood are much indebted for the thousands of jobs—making, altering and repairing. His prudence has "laid by for a wet day" so that he is now building a snug "two story brick" a little out, and although he has hammered in the neighborhood for eighteen years, he has but just begun to be appreciated, and is now up for alderman in his ward. His cabinet is composed of a minute, hammer and anvil which he had wrought out for a watch seal when an apprentice, an Indian spear head, a powder horn, carved by a soldier to illustrate an Indian murder, and a candlestick made of anthracite coal. His library is, one vol. Geological Report, one do. on Banks, Baxter's Call, part of the American Preceptor, 5000 Receipts, Wonders of Nature & Providence, and family Bible.

He does not belong to the church, but his wife does, and attends all the working societies, and gives liberally to the charities.

A CONCISE METHOD OF EXTRACTING THE FOURTH ROOT.

The following rule for extracting the fourth root has been placed in our hands for publication. The author thinks it is original with him; at any rate he has never seen any thing like it.

RULE.—Separate the given number into periods, of four figures each, by putting a point over the unit figure, and every fourth figure from the place of units to the left, and if there be decimals, to the right hand. Find the greatest biquadrate in the left hand period, and place its root in the quotient. Subtract the biquadrate thus found from the said period, and to the remainder bring down the next period, calling this the dividend. Multiply the cube of the quotient by 4000, calling it the imperfect divisor. Find how often the imperfect divisor may be had in the dividend, and place the result in the quotient. Then multiply the square of the former quotient by the last quotient figure, and that product by 600, calling it the first triple product, and place it under the imperfect divisor; then multiply the square of the last quotient figure by the former quotient, and that product by 40, calling it the second triple product, and place it under the first triple product; then cube the last quotient figure, and place it under the second triple product, and the sum of these four call a perfect divisor. Multiply the perfect divisor by the last quotient figure, calling the product the subtrahend. Place this regularly under the dividend, and subtract, bring down the next period for a new dividend. Then, to find another imperfect divisor, (instead of cubing the quotient and multiplying it by 4000,) add to the last perfect divisor the first triple product, and twice the second triple product, and three times the cube of the last quotient figure, placing three cyphers to the right hand of their sum. Then proceed as above directed, remembering at every new period brought down to find your imperfect divisor, according to the above direction.

EXAMPLE.

What is the fourth root of 16243247601?

$\sqrt[4]{16243247601} (=357$ Ans.

81

108000)814324

690625

171500000)1236997601

1236997601

0 Proof.

$3^3 \times 4000 = 108000$ Imperfect divisor.

$3^2 \times 5 \times 600 = 27000$ 1st triple product.

$5^2 \times 3 \times 40 = 3000$ 2d triple product.

$5^3 = 125$ Cube of 5.

138125 Perfect divisor.

Then, 138125

27000

6000

375

171500000 Imperfect divisor.

$35^2 \times 7 \times 600 = 5145000$ 1st triple product.

$7^2 \times 35 \times 40 = 68600$ 2d triple product.

$7^3 = 343$ Cube of 7.

176713943 Perfect divisor.

Ans. 357, the root required.

CHARLES T. GIDINEY.

New Lebanon Springs, N. Y.

COHOES RESOLUTIONS.

At a meeting of the Cohoes Mechanics' Association, an article which appeared in the New York State Mechanic of the 28th of January, headed "*The only way to do it,*" was read, and some debate had upon the suggestions therein contained, when J. R. Clarke, J. M. Tremaine and J. M. Brown were appointed a committee to draft resolutions expressive of the sense of the association upon said article; who reported the following, which were unanimously adopted:

Resolved, That in view of the present state of inactivity in which a large portion of the mechanics and manufacturers of the state are resting, while much that is identified with their interests is at stake, we coincide with the views suggested in a leading article which appeared in the N. Y. S. Mechanic of the 28th of January, under the head of *The only way to do it*.

Resolved, That in our opinion an effort should be made by the State Association to obtain the necessary funds and suitable agent or agents to carry the suggested plan into operation.

Resolved, That we hold ourselves ready to contribute, so far as our means and numbers will permit, to carry out the above object, should the State Association deem it expedient.

Resolved, That the secretary of this society be instructed to send a copy of the above resolutions to the corresponding secretary of the State Association, and also a copy for insertion in the New York State Mechanic.

J. M. BROWN, *Secretary*.

INTELLIGENCE.

There were 482,627 bushels of salt manufactured in Kanawha county, Virginia, during the quarter ending December, 1842.

It appears that the receipts of the Boston & Albany rail-road during the past year, the first of its operations, amount to $512,000, and its current expenditures during the same period, amount to $265,000.

The Iron Foundry of Mr. John H. Spencer of Barre, Mass. was destroyed by fire on the 18th inst. The building was owned by Stephen Heald. Loss abou $800.

The Cincinnati Gazette says, that upward of 500 hydrants have been shut off, and as many families deprived of water, because they could not pay their rent.

A new carbine has been invented, which throws a ball 600 yards, or a distance which was formerly supposed a cannon could not reach.

The ladies of Hingham, Mass. have introduced the fashion of knitting stocking while listening to evening lectures. There's industry for you.

A curious experiment is now being made at the head of the chain pier, Brighton, England, that of raising fresh water from below the ocean by means of an Artesian well. It is intended to bore to the extent of 70 feet, at which depth the chalk formation will, it is expected, be penetrated, and fresh water obtained, which will applied to the formation of a *jet d'eau*.

The sale of machinery in the Dudley woolen mills, a couple of weeks since, illustrated most emphatically the condition of things in manufacturing districts. The machinery which cost $40,000—and most of it is said to be now in a good state—sold for about $4000.—*Wor. Ægis.*

The number of steam-boats employed at this time in navigating the Mississippi and its tributaries, is 450. The average burthen of these boats is 200 tons each, making an aggregat of 90 000 tons, and their aggregate value at $80 per ton, is $7,200,000.

The Ice trade is pushing its way among the isles of the torid zone. The ship Montgomery has been loaded with ice at Boston, for the Isle of France, situated on the east coast of Africa—bring the first ever sent there. She has an ice-house on board, and the builder goes out in her to put it up.

Robert C. Scadin, a cabinet make of Detroit, was fatally injured on the Central rail road, and died soon after, leaving a wife and two children.

It is stated that the city of Shanghae, China, and its dependant villages, contains 200,000 weavers of cotton cloth. This, it must be remembered, is only one of the manufacturing towns. The number of silk weavers is more numerous than those in cotton.

The number of barrels of mackerel inspected in the year 1842, is 75,542, a great falling off! We believe that the greatest number ever taken in one year, was in 1824, when 253,000 barrels were taken. In 1837, 234,000 barrels were taken.

I never played to a full house in Dublin, says Matthews, but once in Crow street, and then they knocked down the door keepers, and got in for nothing.

The Russian Commercial Gazette states that a lump of native gold, of the enormous weight of about 95lbs. was found on the 7th Dec. in the sands of Miass, near the mines at Zlatoost, and placed in the Museum of mines at St. Petersburgh.

It is expected that all the witty papers abroad, will make any quantity of puns on Mr. Hays' election as mayor.—*Pittsburgh Sun.*

The whole affair is not worth a *Hay-pun-ny*.—*Baltimore Sun.*

Havn't the *commons* put the corporation in *clover* by providing *Hay* for the city *Mare*.—*Forum.*

Hay-ho!—*Boston Mail.*

We shall make no remarks upon this subject until we find out what kind of a thing a *hay hoe* is?"—*Am. Citizen.*

It 's a wooden *comb* with a *tail* to it, you *rake*, and goes with the *cradle*—that 's for you, Mr. Cit. As for you, Mr. *Sun*, you may go to *grass* with your *mare*, we do n't care a *straw* for you.—*Mechanic.*

The *Quincy Patriot* states that the granite business in that town in the last seventeen years has amounted to $3,000,000.

The superintendent of the salt springs in Onondaga county, N. Y., states that the quantity of salt manufactured there during the last year was 2,291,903 bushels. This is less than the quantity inspected any previous year since 1837.

CUT NAILS.—The Pennsylvanians, or, as they call themselves in the interior, Pennamites, are now making cut nails largely from their own pig iron. A method has been contrived for rolling the plates so that the grain of the metal runs lengthwise of the nails, and they can be clenched like wrought nails.

INDIA RUBBER BOATS.—A French gentleman tells us that he saw on the Seine an India rubber boat of four hundred tons burthen! It was used for bringing down produce. When unloaded, it was folded up and sent back in a wagon.—*Jour. Com.*

It is stated that the sum of $25,000 has already been subscribed for the purpose of purchasing a site for the erection of a new church for the Rev. E. N. Kirk, now preaching at the Temple.

M. de Humboldt, in a report to the French Academy of Sciences, estimates the total length of a canal route across the Isthmus of Darien at 49 miles, requiring but 12½ miles excavation, and its cost less than $3,000,000, for a depth of 20 feet, 135 wide at the surface and 55 at the base, including 4 double locks, and two steamers.

BUSINESS NOTICES.

☞ All letters and communications intended for this paper should be *post paid to secure attention.*

Terms for vol. 2.—To clubs of 20 or more, having the paper sent in one package, $1 each per annum in advance.

To clubs of not less than 5, sent as above, $1.25 each, in advance.

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☞ DAVID THOMAS BISBEE, whose transactions as agent for this paper and some others are sufficiently notorious, we understand is located in Syracuse. The public are cautioned against having any transactions with him for this paper.

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Having made arrangements with Mr. N. Orr, to do my wood engraving, I recommend him to the public as one who understands his business and will doubtless give satisfaction.

JOHN H. HALL.

Albany, Feb. 4th, 1843.

LEATHER, OIL, AND FINDING STORE,

No. 18 Hudson Street.

J. HOCHSTRASSER,

Will continue the above business at his old stand, and having made arrangements with manufacturers of Leather and Morocco in the cities of NEW-YORK, PHILADELPHIA, and ALBANY, and having in his employ first rate workmen, he is enabled to supply his customers with all the articles in his line on the most reasonable terms, at *Wholesale* or *Retail*, the following are included in his assortment: Oak and Hemlock Harness, Bridle, Collar, Horse, Trunk, Valise and Skirting Leather; Hog Skins, Philadelphia Russet Bridle, do. Facing Skins, do. Lining Hides, do. Top Hides, Patent Leather, Coach Roans, Neats Foot and Liver Oil, Currier's Tools, Oak Sole Leather, Hemlock do., Wax and Grain Upper Leather, do. Calf Skins, Keen's Philadelphia do., Seal and Kip Skins, Splits and Wenlt Leather, Cordovan, Red, Green, White and Yellow Linings, Goat and Sheep Binding Skins, White Alum Dressed Linings, Dressed and Undressed Morocco, Colored Goat and Sheep Skins, English Shoe Thread of all numbers, India Rubber and Patent Cloth, Apron Skins, Stock Binding, &c.

N. B. An assortment of SHOE MAKER'S FINDINGS will be kept on hand.

Also, *Roller Skins, Engine Hose, Band, Picker, String*, and *Patent Leather*, on hand and made to order. *Albany, 1843.*

To Cabinet-Makers and Upholsterers.

DANIEL FRY, No. 40 State street, *Importer of Cutlery and Hardware*, keeps constantly on hand a good assortment of HAIR SEATING and CURLED HAIR, together with a complete assortment of *Cabinet Makers' Hardware*, which is offered for sale low for cash or approved credit.

FIRE ENGINES!!

THE subscribers are manufacturing at Waterford, on an extensive scale, Fire Engines of various patterns, to suit purchasers, and they do not hesitate to recommend their Engines as decidedly superior to any now in use.

They manufacture the common Piston Engine, to work with chains or connecting rods, which they have improved in the construction of the brakes and the application of the power, so as to give them a decided advantage over those now in use. They also manufacture Rogers' Patent Balance Fire Engine, which has always been proved to be of *superior* power to all others.

Prices at the Factory, in complete order for use:

These designed

For 40 men,	largest	Philadelphia size or 11 inch chambers,			$600
" 28 "	"	Albany	"	9 1-4 "	500
" 24 "	"	Common	"	7 "	300
" 16 "	"	N. York city	"	6 1-2 "	350
" 12 "	"	Small		5 1-2 "	450

These prices are one hundred dollars below what engines have formerly been sold for, but they are reduced to suit the times.

The above prices can be reduced $50, by dispensing with the tower and goose neck and passing the water through the forward end of the machine. The *utility* of such an engine is fully equal to any other form, but its appearance is not quite so good. They also manufacture Factory Engines and Forcing Pumps of all sizes; Suction and Leading Hose to order, both rivetted and sewed, of the best quality.

They have been in the business 8 years, and might furnish many testimonials of good workmanship, &c., but as purchasers are supposed to prefer judging for themselves, the subscribers will furnish an engine where desired, and if on trial it is not fully equal in *all* respects to the *best* engines now in use, they will take it away without charge. Having an unlimited water power located at the head of sloop navigation on the Hudson river, and near the junction of the Champlain and Erie canal, with a rail road connecting east with Boston and west with Buffalo, our facilities and arrangements for manufacturing are such that orders can be filled at any season of the year, and with the greatest promptness and despatch at the lowest rates.

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MISCELLANY.

SONG OF ARCHIE THE ROVER.

AUTHOR UNKNOWN.

The knight may reene his bra' bra' steede,
May donne his mayled glove,
In marshalled liste, or tented plaine,
To win his ladye love—
But what 's the brave knight's belted trimme,
Or landsman's geare to mee?
My war steede is mine owne good shippe,
My battle plaine the sea.

To horse the merrie bugle call
May bid the bold dragoone,
And backbutte men, at tuck of drum,
Unsling the musketoon—
But nought for tuck or drum reck I,
Or trooper's trumpet bra';
My cail 's the boatswaine's whistle shrille,
My trumpe the war hurra.

By brake and scaure, all rent and torne,
The landsman's corse must lye;
Foul path for tramplynge hoofe of horse,
Or red artillerie—
But the rivier's trampe shall wound not mee,
Nor the rowle of the rattling gunne,
For a thousand, I weene, in the deep sea wave,
May sleep as sound as one.

FACILITIES OF COMMUNICATION—The Boston Recorder gives a very interesting summary view of the modern facilities for the transmission of intelligence. Sixty years ago a passage from Calcutta to London or to Boston occupied five or six months. Thirty or forty years ago the time of an India voyage was reduced to four months; and ten or fifteen years ago the improvements of science and a better knowledge of the winds and currents had further reduced it to three and a half months. A few years ago an answer to a letter to India could not be expected under a year. But there has been a great change. In 1830, an experimental voyage, with a steamer, was made from Bombay to Suez, the point near where the Israelites are supposed to have crossed the Red Sea. Since 1834, an attempt has been made to open a passage to England by a shorter route, up the Persian gulf and the Euphrates, which would be the shortest possible route. This, however, has failed on account of difficulties in the river. In 1835, the English government came into a system and extended a line of steamers to Alexandria, to act in concert with the boats from Bombay, and connecting with them by an overland passage of about eighty miles of desert, and the navigation of the Nile; so that intelligence which left Bombay on the first of the month would arrive at Suez on the 20th; thence crossing the desert and down the Nile arrive at Alexandria on the 22d; from thence it would reach Marseilles by a steamer on the 30th. From Marseilles the important information would be communicated by telegraph five hundred miles, to Paris, the same day, and at Paris it would be printed and sent two hundred and forty miles to England, where it would be published in four days after its arrival at Marseilles, that is, in thirty-four days from Bombay. To complete the route, it would reach the United States by the steamer leaving Liverpool on the 19th. The steamer which left Liverpool on the 19th of November, and which ought to arrive here on the 4th or 5th of December, would bring intelligence from Bombay to the 1st of October. By continuations of this route, now contemplated, and which will result from the progress of settlement, an easy voyage might soon be made round the world in a few months. In regard to cost, a letter weighing an ounce, and which might contain five or six sheets, can be sent to India for only twice as much as the postage of a single letter from Boston to Washington.

REPELLING FORCE OF SILK.—The efficacy of silk in repelling a musket or pistol shot has frequently been made a subject of doubt and discussion. We have lately met with what we conceive to be a strong demonstration of its repelling force, in a late publication by a medical officer of the army, (Dr. A. Neale,) which derives additional interest from the celebrity of the person principally concerned. "A very promising young officer of engineers, with whom I lived in habits of the greatest intimacy and friendship, while employed in repairing the breaches of Ciudad Ridrigo, consulted me respecting an obstinate headache and giddiness, which I found was principally occasioned by his wearing a stiff black leather stock. I earnestly recommended him to lay it aside, which he tenaciously declined; when, as a further inducement, I told him that, in the event of substituting a black silk handkerchief, it might one day save his life, as silk would certainly turn a ball which might penetrate leather. At length he complied, and, as I had predicted, his headache left him. We soon after parted—he going to the light division, and my station being with Lord Hill. The campaign commenced, and in a few weeks I learned, with the greatest grief, that my gallant friend had fallen at the head of the first storming party at Sebastian. I was then stationed at Reynoze, many leagues distant. As I believed him dead, my surprise and joy were great on receiving a letter from him some weeks afterwards, acquainting me that, when on the very glacis, he had been wounded by a musket ball by a man on the walls. He immediately fell covered with blood, which streamed in profusion from his mouth and nostrils. One of his own corps dragged him immediately into the trench. He was carried to his quarters, and the wound, on examination, was pronounced mortal; the ball, not being found, was supposed to have lodged in the vertebra of the neck. He lived, however, for three days, and no bad symptoms coming on, the surgeons began to doubt the accuracy of their opinions. The sapper who saw him fall, was examined, to ascertain whether he had seen the bullet, which was instantly produced from his waistcoat pocket, saying that untying Mr. Reid's silk handkerchief, he found part of it carried into the wound, and using a little force in withdrawing it, the ball came out with it, not a single thread of the silk handkerchief having given way as appeared on examination. Mr. Reid recovered and is now a lieutenant colonel in the army, and governor of the Bermudas."—*Glasgow Courier.*

THE OLDEST BRIDGE IN ENGLAND.—The oldest bridge now existing in England, is the triangular bridge at Croyland, in Lincolnshire, (sometimes called Crowland) which is said to have been erected about A. D. 860. It is formed by three semi-arches, whose bases stand in the circumferance of a circle, equi-distant from each, and uniting at the top. Nicholson says that this curious triune formation has led many persons to imagine that the architect intended to suggest an idea of trinity.

FRANKLIN.—At one time, the rich merchants and professional men of Philadelphia, proposed to form themselves into a social circle, from which all mechanics were to be excluded. The paper drawn up for that purpose was presented to Dr. Franklin for his signature. On examining its contents, he remarked that he could not consent to unite himself with them, inasmuch as by excluding mechanics from their circle, they had excluded God Almighty, the greatest mechanic in the universe!

DANIEL LAMBERT'S CLOTHES.—The Leicester Journal states that at a recent sale of the property of the late Mr. Owstan, a suit of clothes which had been worn by the celebrated Daniel Lambert was disposed of. The clothes consisted of a coat, waistcoat, and nankeen small clothes, and the dimensions were as follows: the coat—twenty-nine inches across the back, twenty-three round the elbow; in the waistcoat there are eighteen button holes, two inches asunder, circumference of the arm hole forty six inches, round the waist ninety-six inches, length forty six inches; width of small clothes, ninety-six inches, round the knee-band, thirty-two inches, top of thigh, fifty-five inches.

A drunken youth lost his calculation and was dosing in the street, when the bells roused him by their ringing for fire. "Eleven, twelve, thirteen, fourteen, fifteen," cried he; "well, if this is n't later than I ever knew it."

PATENT AGENCY AND MECHANICAL ENGINEERING, *Office on F street, between 7th and 8th streets, opposite the Patent Office, Washington City, D. C.*—The subscriber has resigned his situation in the patent office (where he for some time superintended the restoration of patents destroyed by fire in 1836) to devote himself to the preparation of specifications and drawings, and all matters connected with the obtaining of patents for useful inventions either in this country or Europe. His experience in theoretical and practical mechanics, together with an intimate knowledge of the progress of the useful arts and manufactures, at home and abroad, will enable him to judge of the novelty and utility of inventions submitted to his examination; and as patents are not granted, under the existing patent laws, when the alleged inventions are wanting in novelty, or contravene the established laws of science, he will be able to furnish all the information necessary to avoid the expense of making application for patents which could not be granted.

Having established a foreign correspondence, he will be able to secure patents in Great Britain, France, and other parts of the continent, or furnish information, and prepare all the necessary papers for that purpose.

A model for a machine or apparatus, or specimens for a composition of matter, are required by law, before a patent can issue; by sending a model or specimens to the subscriber, with a short statement of the object of the invention, the necessary papers and drawings will be prepared and forwarded to the applicant for execution, thereby obviating the expenses consequent upon a journey to Washington, or delay in issuing the patent.

Being well acquainted with the patent laws of the United States, England and France, and the decisions of the courts in patent cases, he tenders his services where information is required in reference to infringements of patents, or defence against suits for infringement, such as compiling and arranging evidence, &c.

To individuals and companies wishing to procure drawings and estimates of machinery, or buildings, for manufactories, on the most modern and improved plans, or any other matter connected with mechanical engineering, he will furnish information, and, should it be required, will locate and superintend structures of this description.

Wishing to be generally useful to mechanics and inventors, he will attend to the sale of machinery and patent rights; this, being a place of resort from all parts of the Union, is perhaps the best location for such a purpose.

Papers relating to patents can be sent to the commissioner of patents, when voluminous, free of postage, and models sent to the collectors of the principal ports, will also come free of expense, and the subscriber can be advised thereof by letter, which in all cases must be post paid. All applications for information relating to patents must be accompanied by a fee of five dollars; charges for other business transactions will be made according to their magnitude.

J. JAMES GREENOUGH.

Certificate of HON. H. L. ELLSWORTH, *Commissioner of Patents.*

PATENT OFFICE, NOV. 20TH, 1841.

Mr. *J. J. Greenough*, who has for some years been employed in the patent office, in a highly responsible situation, under the act of 1836, restoring the records, having to my regret tendered his resignation, I take great pleasure in recommending him as a gentleman worthy of confidence, and as being particularly qualified to take charge of any business requiring a knowledge of mechanical science, the progress of the arts, and patent improvements. Mr. Greenough is also well acquainted with the practice of this office.

HENRY L. ELLSWORTH.

REFERENCES.—Hon. S. Prentiss, of *Vt.*, U. S. Senate; Hon. J. P. Kennedy, of *Md.*, U. S. House of Rep.; Hon. John C. Clark, of *N. Y.*, U. S. House of Rep.; Hon. W. Cranch, *Chief Justice, D. C.*; J. W. Hand, Esq., *Chief Clerk, Patent Office;* C. M. Keeler, Esq., *Examiner, Patent Office.*

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